

### **Remarks**

In the Office Action dated December 16, 2003, the Examiner rejected claims 1-60 under 35 U.S.C. § 102(a) based on a disclosure of the HYTHER™ program on March 24, 1999 and in the form of a written abstract and poster communications. The Examiner rejected claims 1-12 and 18 under 35 U.S.C. § 102(a) as being anticipated by a document by Barciszewski & Clark (RNA Biochemistry and Biotechnology, 1999, pp. 11-43). The Examiner rejected claims 13-17 under 35 U.S.C. § 103 as being unpatentable over Barciszewski & Clark in view of the U.S. patent to Lane et al., 6,027,884. The Examiner rejected claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Barciszewski & Clark and Lane et al.

Briefly, by this Amendment, Applicants' attorney has amended each of the independent claims, as well as dependent claims 2, 22 and 42 to more particularly point out and distinctly claim what Applicants regard as their invention. In particular, each of the independent claims has been amended to make it clear that the hybridization thermodynamics of at least one higher order complex is statistically weighted in a process. Clearly, this feature is neither taught, disclosed, nor discussed by any of the prior art of record, taken either alone or in combination with one another. For example, enclosed herewith is a multi-page copy of a presentation entitled "A New Program for the Prediction of DNA Hybridization Thermodynamics," disclosed by the inventors at the March 24, 1999 meeting. The computer program referred to in the presentation materials did not provide statistical weighting in a process of at least one higher order complex because this feature was not in the HYTHER™ program at that date.

Furthermore, the publication entitled "RNA Biochemistry and Biotechnology," also utilized in rejecting each of independent claims of the application, also fails to disclose statistical weighting in a process of at least one higher order complex. While the publication discusses "correction data", the "correction data" refer to the set of thermodynamic rules used to predict the unimolecular secondary structure--namely, first a set of unimolecular structures

are predicted with a crude set of rules and then re-ranked by calculating the structures with a more sophisticated set of corrected rules. This is very different than the claimed invention.

Consequently, in view of the above and in the absence of better art, Applicants' attorney respectfully submits that the application is in condition for allowance, which allowance is respectfully requested.

A check in the amount of \$210.00 is enclosed to cover the two month extension of time fee. Please charge any additional fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978 -- a duplicate of this paper is enclosed for that purpose.

Respectfully submitted,

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